

09/079,569


**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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09/079,569 05/14/98 BOYLE

W A-451D

EXAMINER

HM21/0915

 U S PATENT OPERATIONS RBW  
DEPT 430 M S 27 4 A  
AMGEN INC  
ONE AMGEN CENTER DRIVE  
THOUSAND OAKS CA 91320-1789

ATTORNEYS R PAPER NUMBER

DATE MAILED: 1648

09/15/98

 This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

**NOTICE OF ALLOWABILITY**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

- ☐ This communication is responsive to \_\_\_\_\_
- ☒ The allowed claim(s) is/are 22-24 renumbered as claims 1-3 respectively.
- ☐ The drawings filed on \_\_\_\_\_ are acceptable.
- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- ☒ Applicant MUST submit NEW FORMAL DRAWINGS
- ☐ because the originally filed drawings were declared by applicant to be informal.
- ☒ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto ~~ex~~ to Paper No. 2
- ☐ including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.
- ☒ including changes required by the attached Examiner's Amendment/Comment.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.
- ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

- ☒ Notice of References Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2
- ☒ Notice of Draftperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Interview Summary, PTO-413
- ☒ Examiner's Amendment/Comment
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☒ Examiner's Statement of Reasons for Allowance



UNITED STATES DEPARTMENT OF COMMERCE  
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**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

HM21/0915

U S PATENT OPERATIONS RBW  
DEPT 430 M S 27 4 A  
AMGEN INC  
ONE AMGEN CENTER DRIVE  
THOUSAND OAKS CA 91320-1789

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/079,569	05/14/98	003	BUDENS, R	1648 09/15/98
First Named Applicant	BOYLE, WILLIAM J.			

TITLE OF INVENTION ~~OSTEOPROTEGERIN BINDING PROTEINS~~

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1 A-4510	435-007.240	J08	UTILITY	NO	\$1320.00	12/15/98

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

PATENT AND TRADEMARK OFFICE COPY

**EXAMINER'S REASONS FOR ALLOWANCE**

The following is an Examiner's Statement of Reasons for Allowance:

Applicant's invention is directed to antibodies which  
5 bind osteoprotegerin binding protein (OBP) and a method of  
detecting OBP using these antibodies. Applicant is the first  
to identify and characterize OBP (see parent application  
08/842,842) and, given the knowledge of OBP as taught by  
applicant, it would be well within the level of skill of one  
10 of ordinary skill in the art to use OBP to produce an antibody  
which could be used in well known immunoassay methods. The  
novelty of the claimed invention resides in the identification  
and characterization of the OBP itself. Applicant appears to  
be the first inventor of OBP as disclosed in allowed parent  
15 application Serial No. 08/842,842. Lacey et al. (R) discloses  
osteoprotegerin ligand which appears to be identical to the  
instant OBP. Lacey et al. includes as coauthor applicant  
Boyle. Lacey et al. further discloses that OBP appears to be  
identical to the TRANCE protein of Wong et al. (S) and the  
20 RANK protein of Anderson et al. (T). However, the instant  
application is accorded benefit of the earlier filing date of  
parent application Serial No. 08/842,842, filed April 16,  
1997. Therefore, Wong et al. and Anderson et al. do not  
constitute prior art to the instant application. Thus,  
25 Applicant is the first to identify OBP. Methods for making  
antibodies and for using such antibodies in assays for  
detecting the corresponding antigens are well known and  
routinely used in the art once the antigen, i.e., OBP, has  
been identified. Therefore, the claimed invention is deemed  
30 to distinguish over the art.

Any comments considered necessary by applicant must be

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Art Unit 1648

submitted no later than the Payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

5 Papers relating to this application may be submitted to Group 1600 by facsimile transmission. The Fax number is (703) 308-4242. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30, (November 15, 1989).

10 Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert D. Budens at (703) 308-2960. The Examiner can normally be reached Monday-Thursday from 6:30 AM-4:00 PM, (EST). The Examiner can also  
15 be reached on alternate Fridays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Don Adams, can be reached at (703) 308-0570.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at (703) 308-0196.



Robert D. Budens  
Primary Examiner  
Art Unit 1648

20 rdb  
September 14, 1998

08/079,569  
Dialog  
9/3/98

? ds

Set	Items	Description
S1	125	E13, E14, E15, E31,E32
S2	16	AU="BOYLE WILLIAM J":AU="BOYLE WILLIAM JOSEPH JR"
S3	140	S1 OR S2
S4	37	OSTEOPROTEG?
S5	8	S3 AND S4
S6	29	S4 NOT S5
S7	18	RD (unique items)
S8	39	(OCIF? OR OSTEOCLASTOGEN?(1W)INHIBIT?)
S9	21	S8 NOT (S5 OR S6)
S10	13	RD (unique items)
S11	1049	(ODF? OR OSTEOCLAS?(1W)DIFFERENT?)
S12	1029	S11 NOT (S5 OR S6 OR S8)
S13	24	S12 AND ((ANTIBOD? OR IMMUNOGLOB? OR ANTISER?)(2N)(ODF? OR (OSTEOCLAS?(1W)DIFFERENT?)))
S14	12	RD (unique items)

09/079,569  
Diary  
9/3/98

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(FILE 'USPAT' ENTERED AT 13:54:02 ON 03 SEP 1998)

	E BOYLE, WIL?/IN
L1	30 S E11-E13
L2	0 S OSTEOPROTEG?
L3	0 S PROTEGER?
L4	71 S OPG
L5	0 S L1 AND L4
L6	16 S L1 AND BONE?
L7	0 S L6 AND OSTEOCLA?
L8	72 S OSTEOPRO?
L9	0 S L6 AND L8
L10	8 S OSTEOPROT?